

Claims

1. Plain bearing composite material comprising a steel back layer, a carrier layer of bronze or brass which is cast, sintered or clad on thereon, and a sliding layer sputtered onto the carrier layer or an intermediate layer, consisting of a sliding layer material on the basis of aluminium/tin/copper, characterized in that the composition of the sliding layer material is $\text{AlSn}(22-30)\text{Cu}(2.3-2.8)$, possibly containing up to 2 weight % of each of Ni, Si, and Mn, and with impurity-related components up to 0.5 weight % each, but in total not more than 1 weight %, the hardness of the sliding layer being between 110 and 150 HV 0.002.
2. Plain bearing composite material according to claim 1, characterized in that the sliding layer material is lead-free.
3. Plain bearing composite material according to claim 2, characterized in that the plain bearing composite material is lead-free.
4. Plain bearing composite material according to claim 1, 2 or 3, characterized in that the plain bearing composite materials contains no antimony.
5. Plain bearing composite material according to any one of the preceding claims, characterized in that the composition of the sliding layer material is $\text{AlSn}(22-28)\text{Cu}(2.3-2.8)$.
6. Plain bearing composite material according to claim 5, characterized in that the composition of the sliding layer material is $\text{AlSn}(23-28)\text{Cu}(2.3-2.8)$.

7. Plain bearing composite material according to claim 6, characterized in that the composition of the sliding layer material is AlSn(23-27)Cu(2.4-2.7).
8. Plain bearing composite material according to any one of the preceding claims, characterized in that the hardness of the sliding layer is 110 to 140 HV 0.002.
9. Plain bearing composite material according to claim 8, characterized in that the hardness of the sliding layer is 110 to 130 HV 0.002.
10. Plain bearing composite material according to claim 9, characterized in that the hardness of the sliding layer is 115 to 130 HV 0.002.
11. Plain bearing composite material according to any one of the preceding claims, characterized in that the carrier layer is formed by a CuPb(8-25)Sn(2-12) alloy or a CuZn(20-32) alloy.
12. Plain bearing element, in particular, a plain bearing shell for automotive applications, a crankshaft bearing shell, a connecting rod bearing shell, produced from a plain bearing composite material according to one or more of the preceding claims.